

APPENDIX B:
SEDIMENT ANALYSIS TABLES

TABLE 1 TCLP RESULTS IN SEDIMENTS COLLECTED IN THE VICINITY OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)

ANALYTE	UNITS	REGULATORY LEVEL	MDL	HERBICIDES					
				DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
2,4,5-TP (SILVEX)	MG/L	1	0.00034	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2,4-D	MG/L	10	0.0014	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
METALS									
ARSENIC	MG/L	5	0.019	0.18 B	0.17 B	0.16 B	0.12 B	0.15 B	0.17 B
BARIUM	MG/L	100	0.00036	0.44 B J	0.52 B J	0.57 B J	0.59 B J	0.74 B J	0.47 B J
CADMIUM	MG/L	1	0.00086	0.003 B	0.0026 B	0.0013 B	0.0025 B	0.0032 B	0.1 U
CHROMIUM	MG/L	5	0.0014	0.0025 B	0.0031 B	0.0027 B	0.0018 B	0.0034 B	0.5 U
LEAD	MG/L	5	0.013	0.057 B	0.034 B	0.032 B	0.016 B	0.016 B	0.5 U
MERCURY	MG/L	0.2	0.000071	0.0002 U	0.0002 U	0.000084 B	0.0002 U	0.0002 U	0.00011 B
SELENIUM	MG/L	1	0.027	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
SILVER	MG/L	5	0.0026	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
PESTICIDES									
CHLORDANE (TECHNICAL)	MG/L	0.03	0.00017	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
ENDRIN	MG/L	0.02	0.000015	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
GAMMA-BHC (LINDANE)	MG/L	0.4	0.000015	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
HEPTACHLOR	MG/L	0.008	0.000014	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
HEPTACHLOR EPOXIDE	MG/L	0.008	0.000015	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
METHOXYCHLOR	MG/L	10	0.000031	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
TOXAPHENE	MG/L	0.5	0.000072	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
SEMI-VOLATILES									
1,4-DICHLOROBENZENE	MG/L	7.5	0.0066	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,4,5-TRICHLOROPHENOL	MG/L	400	0.0069	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,4,6-TRICHLOROPHENOL	MG/L	2	0.0075	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,4-DINITROTOLUENE	MG/L	0.13	0.0064	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
CRESOLS (TOTAL)	MG/L	200	0.018	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
HEXACHLOROBENZENE	MG/L	0.13	0.0063	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
HEXACHLOROBUTADIENE	MG/L	0.5	0.0074	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
HEXACHLOROETHANE	MG/L	5	0.0069	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
NITROBENZENE	MG/L	2	0.0073	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
PENTACHLOROPHENOL	MG/L	100	0.0041	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
PYRIDINE	MG/L	5	0.0031	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

TABLE 1 (continued)

ANALYTE	UNITS	REGULATORY LEVEL	MDL	VOLATILES					
				DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
1,1-DICHLOROETHENE	MG/L	0.7	0.0088	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-DICHLOROETHANE	MG/L	0.5	0.0054	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2-BUTANONE (MEK)	MG/L	200	0.034	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
BENZENE	MG/L	3	0.0057	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
CARBON TETRACHLORIDE	MG/L	0.5	0.0067	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
CHLOROBENZENE	MG/L	100	0.0056	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
CHLOROFORM	MG/L	6	0.0062	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
TETRACHLOROETHENE	MG/L	0.7	0.016	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
TRICHLOROETHENE	MG/L	0.5	0.0058	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
VINYL CHLORIDE	MG/L	0.2	0.0074	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
IGNITABILITY	NO UNITS	0	--	0 U	0 U	0 U	0 U	0 U	0 U
PH	NO UNITS	0	--	6.4	6.4	6.4	6.4	6.6	6.4

There are no TEC and PEC values for General Chemistries

MDL: Average method detection limit

B = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed, but not detected

J = compound was detected, but below the reporting limit (value is estimated)

**TABLE 2 PHYSICAL CHARACTERISTICS OF SEDIMENT COLLECTED IN THE VICINITY
OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)**

ANALYTE	UNITS	MDL	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
GRAVEL	%	--	8.1	0	0	0	0	0
SAND	%	--	47.6	12.9	4.2	3.5	1.9	34.3
SILT	%	--	18.6	40.4	44.5	39.8	37.4	28
CLAY	%	--	25.6	46.6	51.2	56.8	60.7	37.8
PLASTIC LIMIT	--	0	0	41	41	47	35	0
PLASTICITY INDEX	--	0	0	16	20	22	23	0
LIQUID LIMIT	--	0	38	56	61	68	59	58
PERCENT SOLIDS	%	0	54.7	44.9	46.4	43.2	48.9	46.2
SPECIFIC GRAVITY	--	0	2.34	2.44	2.31	2.33	2.43	2.4

MDL = average method detection limit

TABLE 3 GENERAL CHEMISTRY CONCENTRATIONS IN SEDIMENTS COLLECTED IN THE VICINITY OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)

ANALYTE	UNITS	MDL	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
ACID VOLATILE SULFIDE	UMOLE/G	0	3	0.99 U	5	3	4	1 U
AMMONIA NITROGEN	MG/KG	25.8	303	487	518	458	291	153
BIOCHEMICAL OXYGEN DEMAND	MG/KG	255	8,130	8,880	8,090	7,690	8,500	7,110
CHEMICAL OXYGEN DEMAND (COD)	MG/KG	21.2	183 U	28 B	215 U	29.1 B	137 B	42 B
CYANIDE, TOTAL	MG/KG	0.46	0.91 U	1.1 U	1.1 U	1.2 U	1 U	1.1 U
HEXAVALENT CHROMIUM	MG/KG	0.143	0.73 U	0.89 U	0.86 U	0.93 U	0.82 U	0.87 U
NITRATE-NITRITE	MG/KG	0.57	1.8 U	2.2 U	2.2 U	2.3 U	1.8 B	2.2 U
TOTAL KJELDAHL NITROGEN	MG/KG	102	1610 J	3270 J	3170 J	3470 J	2890 J	3620 J
TOTAL ORGANIC CARBON	MG/KG	0	17,800	24,800	23,000	31,200	19,400	43,800
TOTAL PHOSPHORUS	MG/KG	48.8	610	1,040	874	827	643	376
TOTAL SULFIDE	MG/KG	2.12	140	402	338	224	288	45
TOTAL PETROLEUM HYDROCARBONS	MG/L	0.502	4.6 U	4.6 U	4.7 U	4.6 U	4.8 U	4.7 U

There are no TEC and PEC values for General Chemistries

MDL = average method detection limit

B = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed, but not detected

TABLE 4 METAL CONCENTRATIONS (MG/KG) IN SEDIMENTS COLLECTED IN THE VICINITY OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)

ANALYTE	UNITS	MDL	TEC*	PEC*	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
ALUMINUM	MG/KG	0.858	--	--	8,300 E	14,500 E	13,300 E	13,900 E	15,700 E	9,760 E
ANTIMONY	MG/KG	0.345	--	--	1 N U	1.1 N U	1.1 N U	1.2 N U	1 N U	1.1 N U
ARSENIC	MG/KG	0.355	9.79	33	4.2	5.4	4.9	4.6	4.5	3.4
BERYLLIUM	MG/KG	0.045	--	--	0.99	1.7	1.5	1.7	1.7	1.4
CADMIUM	MG/KG	0.075	0.99	4.98	0.86	1.1	0.94	0.8	0.83	0.39 B
CHROMIUM	MG/KG	0.100	43.4	111	14.5 NE	25.3 NE	23.5 NE	23.8 NE	27.5 NE	15.4 NE
COBALT	MG/KG	0.057	--	--	9.1 E	14.7 E	14.5 E	16.4 E	18.1 E	12.6 E
COPPER	MG/KG	0.123	31.6	149	42.2	40.2	32.9	25.7	27.9	16.3
IRON	MG/KG	1.92	--	--	16,200 E	27,000 E	23,000 E	23,500 E	25,900 E	12,600 E
LEAD	MG/KG	0.170	35.8	128	37.7 E	62 E	47.5 E	28.3 E	27.4 E	15.6 E
MANGANESE	MG/KG	0.012	--	--	243 E	452 E	475 E	556 E	513 E	251 E
MERCURY	MG/KG	0.013	0.18	1.06	0.089	0.17	0.16	0.17	0.23	0.07
NICKEL	MG/KG	0.132	22.7	48.6	10.7 E	20.7 E	19.5 E	23.4 E a	27.9 E	17.6 E
SELENIUM	MG/KG	0.28	--	--	0.5 U	0.56 U	0.54 U	0.58 U	0.51 U	0.38 B
SILVER	MG/KG	0.032	--	--	0.19 B	0.68	0.68	0.63	0.72	0.056 B
THALLIUM	MG/KG	0.492	--	--	0.51 B	1.2	1.2	1 B	1.5	0.69 B
TIN	MG/KG	0.318	--	--	3.1 BN	4.5 BN	4 BN	3.5 BN	4.6 BN	2.8 BN
ZINC	MG/KG	0.181	121	459	81.5 E	156 E	137 E	118 E	127 E	61.6 E
RATIO OF SEM*/AVS		--	--	--	0.38	0	0.34	0.68	0.43	0

*Source: MacDonald et al. 2000. Archives of Environmental Contamination and Toxicology 39: 20-31.

MDL = average method detection limit

TEC: Threshold effect concentration

PEC: Probable effect concentration

B = compound was detected, but below the reporting limit (value is estimated)

E = value is estimated because of presence of interference.

N = spiked sample recovery is not within control limits

U = compound was analyzed, but not detected

TABLE 5 PAHS CONCENTRATIONS (UG/KG) IN SEDIMENTS COLLECTED IN THE VICINITY OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)

ANALYTE	UNITS	MDL	TEC*	PEC*	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
ACENAPHTHENE	UG/KG	2.25	--	--	23	11	8.5	3.1 J	4.2 J	7.2 U
ACENAPHTHYLENE	UG/KG	2.25	--	--	19	18	23	13	14	3.1 J
ANTHRACENE	UG/KG	1.85	57.2	845	32	33	30	13	19	3.6 J
BENZO(A)ANTHRACENE	UG/KG	1.70	108	1,050	140	130	94	36	42	14
BENZO(A)PYRENE	UG/KG	2.30	150	1,450	160	160	110	44	48	17
BENZO(B)FLUORANTHENE	UG/KG	1.28	--	--	250	250	180	66	61	24
BENZO(GHI)PERYLENE	UG/KG	1.32	--	--	190	190	140	55	53	19
BENZO(K)FLUORANTHENE	UG/KG	2.55	--	--	88	87	72	22	24	9.6
CHRYSENE	UG/KG	1.50	166	1,290	210	220	160	52	45	18
DIBENZO(A,H)ANTHRACENE	UG/KG	1.52	33	--	40	40	29	11	11	3.7 J
FLUORANTHENE	UG/KG	2.42	423	2,230	380	340	240	85	67	27
FLUORENE	UG/KG	2.42	77.4	536	22	16	18	7.1 J	11	7.2 U
INDENO(1,2,3-CD)PYRENE	UG/KG	1.48	--	--	150	150	110	42	39	15
NAPHTHALENE	UG/KG	2.52	176	561	6.9	6.4 J	7.2	4.7 J	9	7.2 U
PHENANTHRENE	UG/KG	1.93	204	1,170	170	120	88	28	31	6.7 J
PYRENE	UG/KG	1.38	195	1,520	260	230	180	63	63	20
1-METHYLNAPHTHALENE	UG/KG	2.20	--	--	5.6 J	5.1 J	4.9 J	3.3 J	5.1 J	7.2 U
2-METHYLNAPHTHALENE	UG/KG	2.50	--	--	7.9	7.8	8.2	5.6 J	10	7.2 U
TOTAL PAHS (ND=0)	UG/KG	--	1,610	22,800	2,154	2,014	1,503	554	556	181
TOTAL PAHS (ND=1/2DL)	UG/KG	--	1,610	22,800	2,154	2,014	1,503	554	556	199

*Source: MacDonald et al. 2000. Archives of Environmental Contamination and Toxicology 39: 20-31.

MDL = average method detection limit

TEC: Threshold effect concentration

PEC: Probable effect concentration

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed, but not detected

TABLE 6 PCB AROCLORS CONCENTRATIONS (UG/KG) IN SEDIMENTS COLLECTED IN THE VICINITY OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)

ANALYTE	UNITS	MDL	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
AROCLOR 1016	UG/KG	52.2	33 U	37 U	210 U	38 U	34 U	36 U
AROCLOR 1221	UG/KG	25.3	33 U	37 U	210 U	38 U	34 U	36 U
AROCLOR 1232	UG/KG	30.8	33 U	37 U	210 U	38 U	34 U	36 U
AROCLOR 1242	UG/KG	21.8	33 U	37 U	210 U	38 U	34 U	36 U
AROCLOR 1248	UG/KG	23.7	33 U	72	210 U	38 U	34 U	36 U
AROCLOR 1254	UG/KG	8.78	33 U	37 U	950	38 U	34 U	36 U
AROCLOR 1260	UG/KG	7.32	47	51	210 U	23 J	19 J	11 J

There are no TEC and PEC values for PCB Aroclors

MDL = average method detection limit

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed, but not detected

TABLE 7 PCB CONGENERS CONCENTRATIONS (UG/KG) IN SEDIMENTS COLLECTED IN THE VICINITY OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)

ANALYTE	UNITS	MDL	TEC*	PEC*	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
PCB 8 (BZ)	UG/KG	0.311	--	--	0.92	2.2	0.99 PG	0.47 PG	0.35 U	7.4 U
PCB 18 (BZ)	UG/KG	0.205	--	--	2.6 PG	2.9 PG	2.3 PG	0.83 PG	0.56 PG	58
PCB 28 (BZ)	UG/KG	0.333	--	--	0.31 U	0.38 U	0.37 U	0.39 U	0.35 U	7.4 U
PCB 44 (BZ)	UG/KG	0.311	--	--	2.1	2.3	1.3 PG	0.7	0.35 U	12
PCB 49 (BZ)	UG/KG	0.312	--	--	3.4	1.6	1	0.55	0.25 J	30
PCB 52 (BZ)	UG/KG	0.292	--	--	3.3	2.2 PG	1.9	0.81	0.36	29
PCB 66 (BZ)	UG/KG	0.248	--	--	3.2	3.8	2.7	0.39 U	0.35 U	7.4 U
PCB 77 (BZ)	UG/KG	0.331	--	--	0.31 U	0.38 U	0.37 U	0.39 U	0.35 U	7.4 U
PCB 87 (BZ)	UG/KG	0.272	--	--	0.83 PG	1.4 PG	1.1 PG	0.56 PG	0.29 J PG	7.4 U
PCB 101 (BZ)	UG/KG	0.310	--	--	2.2 PG	3 PG	2.1 PG	1.1 PG	0.35 U	5.5 J
PCB 105 (BZ)	UG/KG	0.312	--	--	0.66	1	0.7	0.32 J	0.24 J	7.4 U
PCB 118 (BZ)	UG/KG	0.310	--	--	2.4	3	2.1	1	0.65	5.6 J
PCB 126 (BZ)	UG/KG	0.394	--	--	0.31 U	0.38 U	0.37 U	0.39 U	0.35 U	7.4 U
PCB 128 (BZ)	UG/KG	0.310	--	--	0.4 PG	0.77 PG	0.55 PG	0.29 J PG	0.17 J PG	7.4 U
PCB 138 (BZ)	UG/KG	0.330	--	--	2	3.6	2.6	1.5	1.1	4.7 J
PCB 153 (BZ)	UG/KG	0.074	--	--	2.1	3.7	2.5	1.7	1.2	4.3 J
PCB 156 (BZ)	UG/KG	0.310	--	--	0.24 J	0.41	0.29 J	0.39 U	0.35 U	7.4 U
PCB 169 (BZ)	UG/KG	0.291	--	--	0.31 U	0.38 U	0.37 U	0.39 U	0.35 U	7.4 U
PCB 170 (BZ)	UG/KG	0.311	--	--	0.74	1.5	0.98	0.65	0.5	7.4 U
PCB 180 (BZ)	UG/KG	0.310	--	--	1.4	3	1.9	1.3	1	2.3 J
PCB 183 (BZ)	UG/KG	0.292	--	--	0.26 J PG	0.55 PG	0.37 PG	0.3 J PG	0.21 J PG	7.4 U
PCB 184 (BZ)	UG/KG	0.251	--	--	0.31 U	0.38 U	0.37 U	0.39 U	0.35 U	7.4 U
PCB 187 (BZ)	UG/KG	0.312	--	--	0.81	1.8	1.1	0.82	0.61	7.4 U
PCB 195 (BZ)	UG/KG	0.310	--	--	0.13 J PG	0.42	0.37 U	0.39 U	0.35 U	7.4 U
PCB 206 (BZ)	UG/KG	0.292	--	--	0.18 J	0.33 J	0.18 J PG	0.14 J PG	0.21 J	7.4 U
PCB 209 (BZ)	UG/KG	0.330	--	--	0.31 U	0.38 U	0.37 U	0.39 U	0.28 J	7.4 U
TOTAL PCBs (ND=0)	UG/KG	--	59.8	676	49.7	69.5	47.4	23.0	12.8	243
TOTAL PCBs (ND=1/2DL)	UG/KG	--	59.8	676	50.9	71.1	48.9	24.9	15.6	317

** PCB congeners used for Total PCB summation, as per Table 9-3 of the ITM (USEPA/USACE 1998)

MDL = average method detection limit

TEC: Threshold effect concentration

PEC: Probable effect concentration

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed, but not detected

TABLE 8 CHLORINATED PESTICIDES CONCENTRATIONS (UG/KG) IN SEDIMENTS COLLECTED IN THE VICINITY OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)

ANALYTE	UNITS	MDL	TEC*	PEC*	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
KEPONE	UG/KG	2.58	--	--	66 U	37 U	710 U	38 U	34 U	36 U
4,4'-DDD	UG/KG	0.758	4.88	28	28	15	13 J	5.8	4.7	0.96 J PG
4,4'-DDE	UG/KG	0.97	3.16	31.3	40	30	38 PG	6.1 PG	3.3 PG	1.8 PG
4,4'-DDT	UG/KG	0.845	4.16	62.9	6.1	6.6	16 J PG	3.5	1.2 J PG	1.7 J
TOTAL DDT (ND=0)	UG/KG	--	5.28	572	74.1	51.6	67	15.4	9.2	4.46
ALDRIN	UG/KG	0.993	--	--	3.4 U	1.9 U	37 U	2 U	1.7 U	1.8 U
ALPHA-BHC	UG/KG	0.67	--	--	3.4 U	1.9 U	37 U	2 U	1.7 U	1.8 U
BETA-BHC	UG/KG	1.04	--	--	3.4 U	1.9 U	37 U	2 U	1.7 U	1.8 U
CHLOROBENZIDE	UG/KG	3.24	--	--	6.6 U	7.6	71 U	3.8 U	3.4 U	3.6 U
CHLORDANE (TECHNICAL)	UG/KG	7.35	3.24	17.6	34 U	19 U	370 U	20 U	17 U	18 U
DCPA	UG/KG	2.1	--	--	6.6 U	3.7 U	71 U	3.8 U	3.4 U	3.6 U
DELTA-BHC	UG/KG	0.845	--	--	3.4 U	1.9 U	37 U	2 U	1.7 U	1.8 U
DIELDRIN	UG/KG	0.757	1.9	61.8	0.91 J PG	2 PG	21 J PG	0.54 J PG	1.7 U	0.22 J PG
ENDOSULFAN I	UG/KG	0.758	--	--	3.4 U	1.9 U	37 U	2 U	1.7 U	1.8 U
ENDOSULFAN II	UG/KG	1.21	--	--	3.4 U	1.9 U	81 PG	2 U	1.7 U	1.8 U
ENDOSULFAN SULFATE	UG/KG	1.06	--	--	3.4 U	1.9 U	37 U	2 U	1.7 U	1.8 U
ENDRIN	UG/KG	0.777	2.22	207	0.45 J PG	1.9 U	37 U	2 U	1.7 U	1.8 U
ENDRIN ALDEHYDE	UG/KG	1.69	--	--	4.2	3.2 PG	9.9 J PG	1.8 J PG	0.92 J PG	0.73 J PG
GAMMA-BHC (LINDANE)	UG/KG	0.648	2.37	4.99	3.4 U	0.18 J	37 U	0.22 J	0.27 J	1.8 U
HEPTACHLOR	UG/KG	0.755	--	--	3.4 U	1.9 U	37 U	2 U	1.7 U	1.8 U
HEPTACHLOR EPOXIDE	UG/KG	0.952	2.47	16	2.2 J PG	2.4 PG	4.4 J PG	2 U	0.55 J PG	0.6 J PG
METHOXYCHLOR	UG/KG	1.71	--	--	6.6 U	1 J PG	71 U	3.8 U	3.4 U	3.6 U
MIREX	UG/KG	1.06	--	--	3.4 U	1.9 U	37 U	2 U	1.7 U	1.8 U
TOXAPHENE	UG/KG	51.7	--	--	130 U	75 U	1400 U	78 U	69 U	72 U

*Source: MacDonald et al. 2000. Archives of Environmental Contamination and Toxicology 39: 20-31.

MDL = average method detection limit

TEC: Threshold effect concentration

PEC: Probable effect concentration

J = compound was detected, but below the reporting limit (value is estimated)

PG = the percent difference between the original and confirmation analysis is greater than 40%

U = compound was analyzed, but not detected

**TABLE 9 ORGANOPHOSPHORUS PESTICIDES CONCENTRATIONS (UG/KG) IN SEDIMENTS
COLLECTED IN THE VICINITY OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)**

ANALYTE	UNITS	MDL	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
AZINPHOS-METHYL	UG/KG	9.17	33 U	37 U	36 U	38 U	34 U	39 U
CHLORPYRIFOS	UG/KG	6.68	33 U	37 U	36 U	38 U	34 U	39 U
DEMETON (TOTAL)	UG/KG	17.3	33 U	37 U	36 U	38 U	34 U	39 U
MALATHION	UG/KG	6.37	33 U	37 U	36 U	38 U	34 U	39 U
METHYL PARATHION	UG/KG	6.52	33 U	37 U	36 U	38 U	34 U	39 U
PARATHION	UG/KG	7.90	33 U	37 U	36 U	38 U	34 U	39 U

There are no TEC and PEC values for organophosphorus pesticides

MDL = average method detection limit

U = compound was analyzed, but not detected

**TABLE 10 SVOC CONCENTRATIONS (UG/KG) IN SEDIMENTS COLLECTED IN THE VICINITY OF
DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)**

ANALYTE	UNITS	MDL	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
1,2,4-TRICHLOROBENZENE	UG/KG	26.9	330 U	370 U	360 U	380 U	340 U	360 U
1,2-DIPHENYLHYDRAZINE	UG/KG	23.3	330 U	370 U	360 U	380 U	340 U	360 U
2,2'-OXYBIS(1-CHLOROPROPANE)	UG/KG	40.3	330 U	370 U	360 U	380 U	340 U	360 U
2,4,6-TRICHLOROPHENOL	UG/KG	18.7	330 U	370 U	360 U	380 U	340 U	360 U
2,4-DICHLOROPHENOL	UG/KG	26.8	330 U	370 U	360 U	380 U	340 U	360 U
2,4-DIMETHYLPHENOL	UG/KG	22.4	330 U	370 U	360 U	380 U	340 U	360 U
2,4-DINITROPHENOL	UG/KG	657	1600 U	1800 U	1700 U	1900 U	1600 U	1700 U
2,4-DINITROTOLUENE	UG/KG	22.4	330 U	370 U	360 U	380 U	340 U	360 U
2,6-DINITROTOLUENE	UG/KG	19.4	330 U	370 U	360 U	380 U	340 U	360 U
2-CHLORONAPHTHALENE	UG/KG	23.7	330 U	370 U	360 U	380 U	340 U	360 U
2-CHLOROPHENOL	UG/KG	42.6	330 U	370 U	360 U	380 U	340 U	360 U
2-METHYLPHENOL	UG/KG	37.5	330 U	370 U	360 U	380 U	340 U	360 U
2-NITROPHENOL	UG/KG	34.5	330 U	370 U	360 U	380 U	340 U	360 U
3,3'-DICHLOROBENZIDINE	UG/KG	17	1600 U	1800 U	1700 U	1900 U	1600 U	1700 U
4,6-DINITRO-2-METHYLPHENOL	UG/KG	315	1600 U	1800 U	1700 U	1900 U	1600 U	1700 U
4-BROMOPHENYL PHENYL ETHER	UG/KG	25.8	330 U	370 U	360 U	380 U	340 U	360 U
4-CHLORO-3-METHYLPHENOL	UG/KG	22.6	330 U	370 U	360 U	380 U	340 U	360 U
4-CHLOROPHENYL PHENYL ETHER	UG/KG	18.8	330 U	370 U	360 U	380 U	340 U	360 U
4-METHYLPHENOL	UG/KG	55.9	330 U	370 U	360 U	380 U	340 U	360 U
4-NITROPHENOL	UG/KG	17.9	1600 U	1800 U	1700 U	1900 U	1600 U	1700 U
BENZIDINE	UG/KG	158	330 U	370 U	360 U	380 U	340 U	360 U
BENZOIC ACID	UG/KG	127	1600 U	46 J	55 J	1900 U	1600 U	56 J
BENZYL ALCOHOL	UG/KG	81.7	330 U	370 U	360 U	380 U	340 U	360 U
BIS(2-CHLOROETHOXY)METHANE	UG/KG	29.2	330 U	370 U	360 U	380 U	340 U	360 U
BIS(2-CHLOROETHYL) ETHER	UG/KG	29.5	330 U	370 U	360 U	380 U	340 U	360 U
BIS(2-ETHYLHEXYL) PHTHALATE	UG/KG	30.1	150 J	200 J	100 J	52 J	340 U	360 U
BUTYL BENZYL PHTHALATE	UG/KG	27.8	8.4 J	370 U	360 U	380 U	340 U	360 U
DIBENZOFURAN	UG/KG	25.2	85 J	94 J	92 J	380 U	86 J	360 U
DIETHYL PHTHALATE	UG/KG	24.3	330 U	370 U	360 U	380 U	340 U	360 U
DIMETHYL PHTHALATE	UG/KG	21.7	330 U	370 U	360 U	380 U	340 U	360 U
DI-N-BUTYL PHTHALATE	UG/KG	35.8	43 J	46 J	50 J	380 U	42 J	41 J
DI-N-OCTYL PHTHALATE	UG/KG	23.3	330 U	370 U	360 U	380 U	340 U	360 U
HEXACHLOROBENZENE	UG/KG	21.8	330 U	370 U	360 U	380 U	340 U	360 U
HEXACHLOROBUTADIENE	UG/KG	34.9	330 U	370 U	360 U	380 U	340 U	360 U
HEXACHLOROCYCLOPENTADIENE	UG/KG	25.7	1600 U	1800 U	1700 U	1900 U	1600 U	1700 U
HEXACHLOROETHANE	UG/KG	34.9	330 U	370 U	360 U	380 U	340 U	360 U
ISOPHORONE	UG/KG	33.3	330 U	370 U	360 U	380 U	340 U	360 U
NITROBENZENE	UG/KG	33.3	330 U	370 U	360 U	380 U	340 U	360 U
N-NITROSODIMETHYLAMINE	UG/KG	61.5	330 U	370 U	360 U	380 U	340 U	360 U
N-NITROSODI-N-PROPYLAMINE	UG/KG	26.3	330 U	370 U	360 U	380 U	340 U	360 U
N-NITROSODIPHENYLAMINE	UG/KG	51.5	330 U	370 U	360 U	380 U	340 U	360 U
PENTACHLOROPHENOL	UG/KG	181	1600 U	1800 U	1700 U	1900 U	1600 U	1700 U
PHENOL	UG/KG	28.3	330 U	370 U	360 U	380 U	340 U	360 U

There are no TEC and PEC values for volatiles

MDL = average method detection limit

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed, but not detected

TABLE 11 VOC CONCENTRATIONS (UG/KG) IN SEDIMENTS COLLECTED IN THE VICINITY OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)

ANALYTE	UNITS	MDL	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
1,1,1-TRICHLOROETHANE	UG/KG	0.575	9.1 U	11 U	11 U	12 U	10 U	11 U
1,1,2,2-TETRACHLOROETHANE	UG/KG	0.947	9.1 U	11 U	11 U	12 U	10 U	11 U
1,1,2-TRICHLOROETHANE	UG/KG	1.45	9.1 U	11 U	11 U	12 U	10 U	11 U
1,1-DICHLOROETHANE	UG/KG	0.612	9.1 U	11 U	11 U	12 U	10 U	11 U
1,1-DICHLOROETHENE	UG/KG	1.27	9.1 U	11 U	11 U	12 U	10 U	11 U
1,2-DICHLOROBENZENE	UG/KG	1.97	9.1 U	11 U	11 U	12 U	10 U	11 U
1,2-DICHLOROETHANE	UG/KG	0.64	9.1 U	11 U	11 U	12 U	10 U	11 U
1,2-DICHLOROPROPANE	UG/KG	1.35	9.1 U	11 U	11 U	12 U	10 U	11 U
1,3-DICHLOROBENZENE	UG/KG	1.95	9.1 U	11 U	11 U	12 U	10 U	11 U
1,4-DICHLOROBENZENE	UG/KG	1.45	9.1 U	11 U	11 U	12 U	10 U	11 U
2-BUTANONE (MEK)	UG/KG	2.97	9.1 U	11 U	11 U	12 U	10 U	11 U
2-CHLOROETHYL VINYL ETHER	UG/KG	19.5	18 U	22 U	22 U	23 U	20 U	22 U
ACROLEIN	UG/KG	198	180 U	220 U	220 U	230 U	200 U	220 U
ACRYLONITRILE	UG/KG	56.5	180 U	220 U	220 U	230 U	200 U	220 U
BENZENE	UG/KG	1.17	9.1 U	11 U	11 U	12 U	10 U	11 U
BROMODICHLOROMETHANE	UG/KG	0.532	9.1 U	11 U	11 U	12 U	10 U	11 U
BROMOFORM	UG/KG	1.28	9.1 U	11 U	11 U	12 U	10 U	11 U
BROMOMETHANE	UG/KG	1.98	9.1 U	11 U	11 U	12 U	10 U	11 U
CARBON TETRACHLORIDE	UG/KG	0.532	9.1 U	11 U	11 U	4.3 J	2.3 J	3.3 J
CHLOROETHANE	UG/KG	1.98	9.1 U	11 U	11 U	12 U	10 U	11 U
CHLOROFORM	UG/KG	0.532	9.1 U	11 U	11 U	12 U	10 U	11 U
CHLOROMETHANE	UG/KG	0.608	9.1 U	11 U	11 U	12 U	10 U	11 U
CIS-1,3-DICHLOROPROPENE	UG/KG	0.608	9.1 U	11 U	11 U	12 U	10 U	11 U
DIBROMOCHLOROMETHANE	UG/KG	0.552	9.1 U	11 U	11 U	12 U	10 U	11 U
DICHLORODIFLUOROMETHANE	UG/KG	1.07	9.1 U	11 U	11 U	12 U	10 U	11 U
ETHYLBENZENE	UG/KG	1.98	9.1 U	11 U	11 U	12 U	10 U	11 U
METHYLENE CHLORIDE	UG/KG	2.82	9.1 U	11 U	11 U	12 U	10 U	11 U
TETRACHLOROETHENE	UG/KG	1.65	9.1 U	11 U	11 U	12 U	10 U	11 U
TOLUENE	UG/KG	1.27	2.1 J	1.9 J	11 U	12 U	10 U	11 U
TRANS-1,2-DICHLOROETHENE	UG/KG	1.38	9.1 U	11 U	11 U	12 U	10 U	11 U
TRANS-1,3-DICHLOROPROPENE	UG/KG	0.583	9.1 U	11 U	11 U	12 U	10 U	11 U
TRICHLOROETHENE	UG/KG	1.85	9.1 U	11 U	11 U	12 U	10 U	11 U
TRICHLOROFUOROMETHANE	UG/KG	2.57	9.1 U	11 U	11 U	12 U	10 U	11 U
VINYL CHLORIDE	UG/KG	1.38	9.1 U	11 U	11 U	12 U	10 U	11 U

There are no TEC and PEC values for volatiles

MDL = average method detection limit

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed, but not detected

**TABLE 12 BUTYLTIN CONCENTRATIONS (UG/KG) IN SEDIMENTS COLLECTED IN
THE VICINITY OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)**

ANALYTE	UNITS	RL	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
DIBUTYLTIN	UG/KG	2.77	2.4 U	2.8 U	2.8 U	3.1 U	2.7 U	2.8 U
MONOBUTYLTIN	UG/KG	2.10	1.8 U	2.1 U	2.2 U	2.4 U	2 U	2.1 U
TETRABUTYLTIN	UG/KG	3.58	3.1 U	3.6 U	3.7 U	4 U	3.5 U	3.6 U
TRIBUTYLTIN	UG/KG	3.18	2.7 U	3.2 U	3.3 U	3.6 U	3.1 U	3.2 U

There are no TEC and PEC values for butyltins

RL = average reporting limit

U = compound was analyzed, but not detected

TABLE 13 DIOXIN CONCENTRATIONS (PG/G) IN SEDIMENTS COLLECTED IN THE VICINITY OF DREDGING OPERATIONS IN DOGUE CREEK (JUNE 2004)

ANALYTE	UNITS	MDL	TEF*	DC04-7	DC04-8	DC04-9	DC04-10	DC04-11	DC04-12
2,3,7,8-TCDD	PG/G	1	1	0.22 U	0.38 U	0.28 U	0.35 U	0.27 U	0.22 U
1,2,3,7,8-PECDD	PG/G	5	1	0.93 U	1.2 U	1 U	1 U	1 U	1 U
1,2,3,4,7,8-HXCDD	PG/G	5	0.1	1.4 U	1.4 U	1.3 U	1.6 U	2.9 U	1.8 U
1,2,3,6,7,8-HXCDD	PG/G	5	0.1	4.3 U	4.9 U	3.7 U	4.2 U	2.9 U	6.2 J
1,2,3,7,8,9-HXCDD	PG/G	5	0.1	3.4 U	4.8 U	3.4 U	4.1 U	4.2 U	9.9 J
1,2,3,4,6,7,8-HPCDD	PG/G	5	0.01	160	180	130	170	92	310
OCDD	PG/G	10	0.0001	5100	5500	3800	3900	4800	6600
2,3,7,8-TCDF	PG/G	1	0.1	2	3.7	3.6	2	1.8 J	0.91 U
1,2,3,7,8-PECDF	PG/G	5	0.05	0.86 U	1.1 U	0.9 U	0.67 U	0.76 U	0.39 U
2,3,4,7,8-PECDF	PG/G	5	0.5	1.2 U	1.7 U	1.4 U	1.1 U	0.88 U	0.41 U
1,2,3,4,7,8-HXCDF	PG/G	5	0.1	1.4 U	1.5 U	1.1 U	0.86 U	1.1 U	0.48 U
1,2,3,6,7,8-HXCDF	PG/G	5	0.1	1.7 U	2 U	1.4 U	1.4 U	1.1 U	0.65 U
2,3,4,6,7,8-HXCDF	PG/G	5	0.1	0.97 U	0.53 U	0.54 U	0.42 U	0.43 U	0.24 U
1,2,3,7,8,9-HXCDF	PG/G	5	0.1	0.18 U	0.11 U	0.15 U	0.1 U	0.2 U	0.087 U
1,2,3,4,6,7,8-HPCDF	PG/G	5	0.01	8.3 J	9.5 J	6 J	4.9 U	4.5 U	2.9 U
1,2,3,4,7,8,9-HPCDF	PG/G	5	0.01	0.86 U	0.98 U	0.6 U	0.53 U	0.7 U	0.35 U
OCDF	PG/G	10	0.0001	26	30	19 J	14 J	36	8.5 U
DIOXIN TEQ (ND=0)	PG/G	--	--	2.40	2.82	2.10	2.29	1.58	5.37
DIOXIN TEQ (ND=1/2DL)	PG/G	--	--	3.96	4.83	3.70	3.92	3.13	6.32

There are no TEC and PEC values for dioxins

*Source : Van den Berg et al. 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for Humans and Wildlife.

Environmental Health Perspectives 106: 775-792.

MDL = average method detection limit

TEF = toxicity equivalency factor

TEQ = toxicity equivalency quotient

J = compound was detected, but below the reporting limit (value is estimated)

U = compound was analyzed, but not detected